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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/751,660	12/28/2000	Behrang Behin	ONX-105	8890

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EXAMINER

ROJAS, OMAR R

ART UNIT	PAPER NUMBER
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2874

DATE MAILED: 01/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Applicant(s)	Applicant(s)	
	09/751,660	BEHIN ET AL.	
	Examiner	Art Unit	
	Omar Rojas	2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-51 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-51 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 December 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>4,5,8</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

1. The prior art documents submitted by applicant in the Information Disclosure Statement(s) filed on December 28, 2000; January 4, 2002; and December 5, 2002 have all been considered and made of record (note the attached copy of form(s) PTO-1449).

Election/Restrictions

2. Applicant's election with traverse of claims 1-36 in Paper No. 7 is acknowledged. The traversal is on the ground(s) that restriction is improper under MPEP 806.05(c). This argument is persuasive and the examiner withdraws the previous restriction requirement.

Specification

3. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. **Claims 1-36 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent No. 5,726,073 to Zhang et al. ("Zhang").**

Regarding claims 1 and 23, Zhang discloses a two-dimensional scanner (see Figs. 1-3) comprising: a base (100); an outer frame (50) rotatably attached to the base; an inner part (24) rotatably attached to the outer frame (50); a first set of comb fingers (86) attached to the inner part; a second set of comb fingers (90) attached to the outer frame (50)

Regarding claims 2 and 24, see col. 6, ll. 4-15 of Zhang.

Regarding claims 3 and 25, Zhang discloses numerous spring beam connectors (114-117, for example) which apply a constant biasing force between base (100) and outer frame (50).

Regarding claims 4-10 and 26-32, Zhang discloses comb-type drive capacitors (80, 82, 126, 128) that provide driving means, angular/rotational motion, and sensing for between the base, inner part, and outer part. See col. 6, ll. 10-15 and 35-50. Zhang further teaches gap-closing type actuators using suspension beams such as (i.e., 140-142) which are driven by electrodes, provide rotational motion (see col. 6, ll. 57-65), and may also used as sensors (see col. 7, ll. 15-25). Thus, all the limitations of claims 4-10 and 26-32 are substantially met by Zhang.

Regarding claims 11-18, Zhang discloses a third set of comb fingers (84) attached to the inner part (24) and a fourth set (88) attached to the outer frame (50). These comb fingers along with the first and second set of comb fingers (86, 90) operate and comprise means that substantially meet all the limitations of claims 12-18 with any unspecified means being inherent in Zhang. Id. at col. 6, ll. 4-15.

Regarding claims 19-22 and 33-36, Zhang discloses numerous torsional beams (70, 72, 114-117, etc.) which have rectangular and/or T-shaped cross-sections, facilitate rotational motion, connect the inner part (24) to the outer frame (50), and the outer frame to the base (100).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 37-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,097,859 to Solgaard et al. (hereinafter Solgaard) in view of Zhang as applied to claims 1-36.

Regarding claims 37-51, the examiner incorporates the previous remarks concerning claims 1-36.

Solgaard discloses a fiber-optic switch (10) comprising: an array of input optical fibers (14); one or more arrays of mirrors (48); an array of output fibers (24); and microlenses (26, 32).

Note, that Solgaard does not appear to expressly disclose the same type of two-dimensional scanner as recited by claims 37-51.

Zhang, as previously discussed, discloses the same type of two-dimensional ("2-D") scanner recited by claims 37-51.

The ordinary skilled artisan would have sought to modify Solgaard by using the 2-D scanner of Zhang to control the mirror arrays (48) in Solgaard because Zhang provides advantageous multi-dimensional motion and highly precise displacements. See Zhang at col. 3, ll. 50-65.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to modify Solgaard to obtain the invention specified by claims 37-51.

Conclusion

9. Since the Zhang reference used in the above rejection was submitted by applicant in the prior art statement, no copy thereof is being provided with this Office action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Omar Rojas whose telephone number is (703) 305-8528 and whose e-mail address is *omar.rojas@uspto.gov*. The examiner can normally be reached on Monday-Friday (7:00AM-3:00PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hemang Sanghavi, can be reached on (703) 305-3484. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7722 for regular communications. The examiner's personal work fax number is (703) 746-4751.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Omar Rojas
Patent Examiner
Art Unit 2874

or
January 23, 2003



HEMANG SANGHAVI
PRIMARY EXAMINER